

**Alpine Satellite Development Plan
Draft Environmental Impact Statement**

Appendix B

ANILCA SECTION 810 ANALYSIS OF SUBSISTENCE IMPACTS

ANILCA Section 810 Analysis of Subsistence Impacts

ConocoPhillips Alaska Incorporated (CPAI) is seeking authorization to develop and produce oil from several of its leases currently held in the Northeast Area of the National Petroleum Reserve-Alaska. To this end, the Bureau of Land Management has prepared a Draft Environmental Impact Statement (DEIS) to assess the environmental consequences of the various actions proposed by CPAI. Sections 3 and 4 of the Alpine Satellite Development Plan (ASDP) DEIS provide a detailed description of both the affected environment of the Plan Area and the potential adverse effects of the various alternatives to subsistence use and subsistence resources. This appendix uses the detailed information presented in the ASDP DEIS to evaluate the potential impacts to subsistence pursuant to Section 810(a) of the Alaska National Interest Land Conservation Act (ANILCA).

I. SUBSISTENCE EVALUATION FACTORS

Section 810(a) of ANILCA requires that an evaluation of subsistence uses and needs be completed for any federal determination to “withdraw, reserve, lease, or otherwise permit the use, occupancy or disposition of public lands.” As such, an evaluation of potential impacts to subsistence under ANILCA § 810 must be completed for the ASDP DEIS. ANILCA requires that this evaluation include findings on three specific issues:

1. The effect of such use, occupancy, or disposition on subsistence uses and needs;
2. The availability of other lands for the purpose sought to be achieved; and
3. Other alternatives that would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes (16 U.S.C. § 3120).

The evaluation and findings required by ANILCA § 810 are set out for each of the five alternatives (including the No Action Alternative) considered in the ASDP DEIS.

A finding that the proposed action may significantly restrict subsistence uses imposes additional requirements, including provisions for notices to the State and appropriate regional and local subsistence committees, a hearing in the vicinity of the area involved, and the making of certain determinations as required by Section 810(a)(3). It should be determined that:

- A. Such a significant restriction of subsistence uses is necessary, and consistent with sound management principles for the utilization of the public lands;
- B. The proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition; and
- C. Reasonable steps will be taken to minimize adverse effects upon subsistence uses and resources resulting from such actions.

To determine if a significant restriction of subsistence uses and needs may result from any one of the alternatives discussed in the ASDP DEIS, including their cumulative effects, the following three factors in particular are considered: 1) the reduction in the availability of subsistence resources caused by a decline in the population or amount of harvestable resources; 2) reductions in the availability of resources used for subsistence purposes caused by alteration of their normal locations and distribution patterns; and 3) limitations on access to subsistence resources, including from increased competition for the resources.

A significant restriction to subsistence may occur in at least two instances: 1) when an action substantially may reduce populations or their availability to subsistence users, and 2) when an action may substantially limit access by subsistence users to resources. The Environmental Consequences section of the ASDP DEIS provides much of the data concerning levels of resource reduction and harvest limitations, and was used to determine whether the level of effects of each alternative is extensive enough to cause a possible significant restriction to subsistence. Section 3, Affected Environment, provides information regarding areas and resources important for subsistence use, and the degree of dependence of affected villages on

different subsistence populations. The information contained in the ASDP DEIS is the primary data used in this analysis.

A subsistence evaluation and findings under ANILCA § 810 must also include a cumulative impacts analysis. Section II, below, begins with an evaluation and finding for each of the five Alternatives, as well as the full-field development scenarios that accompany each alternative except for the No-Action Alternative. Finally, the most intensive cumulative case, as is discussed in Section 4F of the ASDP DEIS, is evaluated. This approach helps the reader to separate the subsistence restrictions that may be caused by activities proposed by the ASDP DEIS alternatives from those that may be caused by past, present, and future activities that may occur, or have already occurred, in the surrounding area.

In addition to ANILCA, Environmental Justice as defined in Executive Order 12898 also calls for the analysis of federal actions on minority populations with regard to subsistence. Specifically, Environmental Justice is:

"The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

Section 4-4 of Executive Order 12898 regarding the Subsistence Consumption of Fish and Wildlife requires Federal agencies to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence, and to communicate to the public any risks associated with the consumption patterns. To this end, the subsistence analyses of all alternatives located in Section 4 of the ASDP DEIS have been reviewed, and are found to comply with Environmental Justice.

II. ANILCA 810(A) EVALUATIONS AND FINDINGS FOR ALL ALTERNATIVES AND THE CUMULATIVE CASE

The following evaluations are based on information relating to the environmental and subsistence consequences of the No Action Alternative, as well as proposed actions including full-field development scenarios, Alternatives A through D, and the cumulative case as presented in Section 4 of the ASDP DEIS. The stipulations discussed in Section 2 of the ASDP DEIS are also considered for the alternatives to which they apply. The evaluations and findings focus on potential impacts to the subsistence resources themselves, as well as access, economic, and cultural issues that relate to subsistence use.

A. Evaluation and Finding for the No Action Alternative

The No Action Alternative of the ASDP DEIS precludes the currently proposed development in the ASDP Area. No oil in the ASDP Area would be produced, except that which is currently extracted through the existing Alpine Facility. No new roads, airstrips, pipelines or other oil and gas facilities would be constructed, beyond what has been authorized in connection with CPAIs current development at CD-1 and CD-2.

However, activities that are currently allowed as a result of the 1998 Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement Record of Decision (ROD) would continue. These activities include seismic exploration, exploratory drilling of test wells, and the resultant construction of ice roads and pads to support these operations.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

Effects to subsistence resources of activities that would result under the No-Action Alternative consist primarily of those actions associated with scientific research during the summer, and oil and gas exploration during the winter. Numerous studies are conducted on a year-round basis on the North Slope, and aerial survey by fixed-wing or helicopter, or ground surveys on foot or by off-highway vehicle (OHV), all have the potential to disturb animals. The most frequent complaints voiced by local subsistence users is the large amount of aerial disturbance to animals that occurs each field season in conjunction with scientific studies (Subsistence Advisory Panel [SAP] Minutes, June 6, 2002 meeting; SAP Minutes, August 22, 2002 meeting). However, the mandatory stipulations contained in the Northeast NPR-A Record of Decision serve to minimize the potential effects of research by various entities. As a result, the effects of non-oil and gas activities on species utilized by subsistence users is expected to be local and short-term, and to have no regional population effects.

Subsistence activities that occur during the winter season, and therefore could be affected by seismic exploration or exploratory drilling include: furbearer trapping, fishing, and opportune hunting. Recent testimony by community members from Barrow and Nuiqsut has indicated that seismic exploration does interfere with overland travel by snowmobile (SAP Minutes, June 6, 2002 meeting; Harry Brower, personal communication). Specifically, the deep ruts left in the snow by seismic vehicles create difficult terrain to traverse, and result in excessive wear-and-tear on both snowmobiles and the sleds that are pulled behind them. Replacement or repair of these tools that are used for subsistence harvesting is costly. However, despite the hindrance and annoyance, seismic exploration does not create a substantial barrier between communities and subsistence resources.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking this EIS to fulfill the mandates of the President's energy policy as well as BLMs responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in this EIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best available technology." The ASDP Area under consideration was chosen because of the known presence of recoverable oil reserves, as well as its proximity to existing oil infrastructure. The No Action Alternative does not authorize any oil and gas development activities in the NPR-A. However, other lands managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

No new oil and gas production or processing facilities would be developed in the ASDP Area under the No Action Alternative.

4. Finding

The effects of the No Action Alternative fall below the level of possibly significantly restricting subsistence uses and needs. The impacts to subsistence resources and access discussed above are minimal. This finding applies to the entire Planning Area.

B. Evaluation and Findings for Alternative A—CPAI Development Plan

Alternative A of the DEIS consists of the applicant's proposed action. Specifically, the alternative would allow for the construction of five new production pads, CD-3 through CD-7, as well as infrastructure such as above ground pipelines, gravel roads, and a gravel airstrip within the ASDP Area. All pipelines would be constructed on vertical support members (VSMs) and would be at least five feet in elevation above the tundra. Power lines would be supported on cable trays attached to the VSMs, except for between CD-6 and CD-7, where they would be supported from power poles. A bridge would be built across Nigliq Channel to accommodate road traffic and pipelines, and all local residents would be allowed to use the gravel roads. The proposed CD-6 pad would be located within the Fish Creek setback area, a three-mile zone along both banks of the creek in which no permanent oil and gas surface facilities are allowed under the current Northeast NPR-A ROD. Having a road across Nigliq Channel that attaches to the Alpine Central Processing Facility (CPF) violates Stipulation 48 of the Northeast NPR-A ROD, which does not allow any permanent road to be connected to a road system outside of the Northeast Planning Area.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

The analysis of Alternative A presented in Section 4A.4.4.1 considers the effects of construction and operation on subsistence. During the construction period, the analysis concludes that the effect of Alternative A would have negative consequences to access to subsistence resources for the community of Nuiqsut, and possibly Atqasuk and/or Barrow. This issue would result from the temporary displacement of caribou, wolf and wolverine during the construction period, as well as the presence of construction activities near key hunting and fishing areas along Fish Creek and the Nigliq Channel. Because of the displacement of key resources, hunters from Nuiqsut will need to travel farther, and expend a greater amount of time, effort, and financial resources to partake in their traditional hunting and gathering activities. Additionally, subsistence hunters will avoid construction areas, regardless of the presence of workers, for both safety and regulatory concerns. Effects to access from construction are expected to last for a minimum of two years, and to be localized to the ASDP Area including the two proposed gravel mine sites (see Figure 2.3.3.1-1).

At issue for subsistence during the operation period are three primary development infrastructures: gravel roads, pipelines, and bridges. Traffic on gravel roads has been shown to disrupt or delay caribou movement, and pipeline(s) could impede the movement of caribou, especially during the winter months when snow is on the ground. Experience has shown that while access for hunting and fishing is not restricted in development areas by law or policy, subsistence hunters are encouraged to stay away. Similarly, many hunters are wary to shoot or discharge firearms near pipelines or other development infrastructure for safety or environmental impact reasons (i.e., no one wants to create an oil spill by piercing a pipeline). Therefore, even though animals may become acclimated to the infrastructure during the operation period, hunter will still need to travel greater distances and expend greater time, effort, and money to harvest traditional resources. Although local residents would be allowed to use the gravel roads connecting CD2 to CD-7, at present there are no plans to connect this gravel road to the village of Nuiqsut, thus, providing no direct benefit to the community. Bridges across Nigliq Channel or other smaller streams may impede boat travel along these waterways, both due to an increased risk for siltation, as well as the presence of the bridge itself. During the summer, waterways comprise the main transportation corridors to and from important subsistence harvest areas. Additionally, marine mammals, fish, waterfowl, and caribou are regularly harvested from boats.

Analyses presented for individual subsistence species (i.e., fish, land mammals, waterfowl, etc.) finds negligible impacts as a result of both construction and operation under Alternative A, with most impacts being temporary and insignificant at the population level (see Section 4A.3.3, 4A.3.4, and 4A.3.5). These findings are primarily due to the fact that the majority of the construction will occur during the winter, which serves to limit the effects of potential impacts to many resources, as well as various construction designs (i.e., height of pipelines, constructing roads away from pipelines, etc.) and the eventual habituation of wildlife to the infrastructure.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking the ASDP DEIS to fulfill the mandates of the President's energy policy as well as BLMs responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in this DEIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best available technology." The ASDP Area under consideration was chosen because of the known presence of recoverable oil reserves, as well as its proximity to existing oil infrastructure. Other lands managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes are described in the main body of the ASDP DEIS, many of which became alternatives considered but eliminated from further analysis because of either economic or technological disadvantages. Section 2.6 contains a detailed discussion of these alternatives, including rationale regarding each alternative's infeasibility for the proposed project at hand.

4. Findings

The effects of Alternative A fall above the level of significantly restricting subsistence use for the community of Nuiqsut. The potential impacts to subsistence resources (displacement) and access discussed above exceed the non-significant level; therefore, a positive determination pursuant to ANILCA § 810 is required. As stated in the analysis presented in Section 4A.4.4.1 "industrial development in the Fish and Judy creeks and Colville Delta areas would reduce the availability of resources and access to the area currently supporting more than half of the harvested fish, caribou, wolves, wolverine, geese and eiders at Nuiqsut. Subsistence harvests would not be reduced to the same extent, but subsistence access would be affected as subsistence users avoid industrial areas because of perceived regulatory barriers and safety concerns with shooting around industrial development." Additionally, the effects of resource displacement and the subsequent changes to resource harvest patterns by the residents of Nuiqsut have the potential to affect multiple hunter generations.

Depending on the resulting migration patterns for the Teshekpuk Lake Herd, and the areas of relocation for other subsistence species, the communities of Barrow, Atkasuk and Anaktuvuk Pass may also be affected. However, enough data does not currently exist to warrant a positive finding under ANILCA § 810 for these three communities.

C. Evaluation and Findings for Alternative B—CPAI Development Plan

Alternative B of the DEIS would also allow for the construction of five new production pads, CD-3 through CD-7, but would require conformance with the existing Northeast NPR-A ROD. As a result, the location of CD-6 would be moved out of the 3-mile setback along Fish Creek, and gravel roads would only connect CD-1 to CD-4, and CD-6 to CD-7; CD-5 would remain roadless. Access to gravel roads would be restricted to local residents, and the bridge crossing Nigliq Channel would be for pipelines only. Gravel airstrips would be required at CD-3, CD-5 and CD-6. All pipelines would be constructed on VSMs and would be at least five feet in elevation above the tundra. Power lines would be buried in the roadways, or buried in the

tundra next to pipelines where roads do not exist. At stream crossings, power lines would be hung off bridge pipelines, or would be trenched across minor drainages.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

The evaluation for Alternative B is expected to be the same as that presented for Alternative A with regard both the construction and operational period. Construction of pipelines, gravel roads, and gravel airstrips would occur during the winter, and would occur in key hunting and fishing areas near Fish Creek and the Nigliq Channel. Access to subsistence harvest areas would be greatly reduced by the presence of infrastructure, as well as by the displacement of key subsistence resources. Any benefit gained by eliminating the road between CD-2 and CD-6 would be greatly offset by the resulting increase in using aircraft to access CD-5 and CD-6, which would have a greater impact on land mammals (especially caribou), and waterfowl (see Sections 4B.3.3.1, 4B3.4.1, 4B3.5.1, and 4B.4.4.1). However, constructing CD-6 outside of the 3 mile setback along Fish Creek, as well as eliminating the gravel road between CD-5 and CD-6, and constructing only a pipeline bridge across the Nigliq Channel would serve to instill confidence in the residents of Nuiqsut that CPAI is aware of their concerns, and takes seriously recommendations made to them through the years.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking this IAP/EIS to fulfill the mandates of the President's energy policy as well as BLM's responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in this DEIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best available technology." The ASDP Area under consideration was chosen because of its proximity to existing and future potential oil fields. Other lands within the NPR-A that are managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes are described in the main body of the ASDP DEIS, many of which became alternatives considered but eliminated from further analysis because of either economic or technological disadvantages. Section 2.6 contains a detailed discussion of these alternatives, including rationale regarding each alternative's infeasibility for the proposed project at hand.

4. Findings

The effects of Alternative B fall above the level of significantly restricting subsistence use for the community of Nuiqsut. The potential impacts to subsistence resources and access discussed above exceed the non-significant level; therefore, a positive determination is required pursuant to ANILCA § 810. Industrial development in the Fish and Judy creeks and Colville Delta will reduce the availability of and access to more than half of the harvested fish, waterfowl and terrestrial mammals.

Depending on the resulting migration patterns for the Teshekpuk Lake Herd, and the areas of relocation for other subsistence species, the communities of Barrow, Atqasuk and Anaktuvuk Pass may also be affected.

However, enough data does not currently exist to warrant a positive finding under ANILCA § 810 for these three communities.

D. Evaluation and Findings for Alternative C—CPAI Development Plan

Alternative C of the DEIS is similar to Alternative A, with alternate routes for the gravel road and pipeline between CD-2, CD-6 and CD-7. Specifically, Alternative C differs from Alternative A by having a gravel road between CD-3 and the Alpine CPF, connecting Nuiqsut to the gravel road system, hanging all power lines from power poles, and constructing pipelines at a minimum height of 7 feet. The proposed CD-6 pad would be located within the Fish Creek setback area, a three-mile zone along both banks of the creek in which no permanent oil and gas surface facilities are allowed under the current Northeast NPR-A ROD, and the bridge/road across Nigliq Channel would violate Stipulation 48 of the Northeast NPR-A ROD, which does not allow any permanent road to be connected to a road system outside of the Northeast Planning Area.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

The evaluation for Alternative C is expected to be the same that presented for Alternative A with regard to subsistence resources during road and pipeline construction. However, the route of Alternative C is 3 miles from, and connected to, the community of Nuiqsut, resulting in an increase in traffic to and from the village. In addition, construction of a road to CD-3 would have a great potential to negatively affect fish habitat and movement (see Section 4C.3.3.1). The increase of pipeline height from 5 feet to 7 feet would aid in allowing for free movement of caribou or subsistence user on snowmobiles. However, the resulting access afforded to subsistence hunters through the road connection to Nuiqsut would most likely result in a concerted focus of harvesting efforts along the road from vehicles. This could result in increased competition, and a hunter-caused displacement of resources due to the large number of vehicles utilizing the roads (see Sections 4C.3.4.1 and 4C.4.3.1).

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking this DEIS to fulfill the mandates of the President's energy policy as well as BLM's responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in the EIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best available technology." The ASDP Area under consideration was chosen because of its proximity to existing and future potential oil fields. Other lands within the NPR-A that are managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes are described in the main body of the ASDP DEIS, many of which became alternatives considered but eliminated from further analysis because of either economic or technological disadvantages. Section 2.6 contains a detailed discussion of these alternatives, including rationale regarding each alternative's infeasibility for the proposed project at hand.

4. Findings

The effects of Alternative C fall above the level of significantly restricting subsistence use for the community of Nuiqsut. The potential impacts to subsistence resources by displacement during construction and operation, as well as the decrease in access to key subsistence harvest areas near Fish and Judy creeks and the Nigliq Channel discussed above exceed the non-significant level; therefore, a positive determination is required pursuant to ANILCA § 810. Industrial development in the Fish and Judy creeks and Colville Delta will reduce the availability of and access to more than half of the harvested fish, waterfowl and terrestrial mammals by the community of Nuiqsut.

Depending on the resulting migration patterns for the Teshekpuk Lake Herd, and the areas of relocation for other subsistence species, the communities of Barrow, Atkasuk and Anaktuvuk Pass may also be affected. However, enough data does not currently exist to warrant a positive finding under ANILCA § 810 for these three communities.

E. Evaluation and Findings for Alternative D—CPAI Development Plan

Alternative D varies greatly from all other alternatives in that all of the proposed production pads would be roadless under this alternative, with access only by air, ice-road, or low-pressure vehicles allowed for tundra travel. Either airstrips or helipads would be constructed at every production pad to facilitate year-round access by either fixed-wing aircraft or helicopters. Pipelines would connect all production pads, and would be constructed at a minimum height of 7 feet above the tundra, with all powerlines located in cable trays mounted on the VSMs. Because no road or bridge would cross Nigliq Channel, the pipeline connecting the production pads to the Alpine CPF would be buried beneath the channel using horizontal directional drilling. CD-6 and the pipeline connecting CD-5 to CD-6 and CD-6 to CD-7 would be located in the 3 mile setback along Fish Creek. All construction activities would be staggered under this alternative, with, construction occurring at those pads considered to have the highest production potential.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

Alternative D is expected to have less direct effects to subsistence during the construction period for pipelines and airstrips/helipads, due to the reduction in construction effort. Displacement of animals, especially wolf, wolverine, and caribou would occur during construction. However, the lack of extensive vehicle traffic needed for the construction of gravel roads, and the predominant use of low pressure vehicles and other winter ice-road construction equipment will reduce the intensity of the effect (see Section 4D.3.4.1).

During the operational phase, the primary effect to subsistence resources will be by aircraft, with helicopter or fixed-wing, both of which have been shown to cause displacement of caribou and other resources. The extent of this impact will be dependent on the number and frequency of aircraft trips to the various production pads, and on the type of aircraft utilized. Constructing pipelines at a minimum height of 7 feet will allow for improved access for both caribou and snowmobiles, and will serve to mitigate access issues to the Fish and Judy Creek harvest area. Additionally, not having a bridge across the Nigliq Channel will alleviate issues regarding access and hunting using boats.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking this DEIS to fulfill the mandates of the President's energy policy as well as BLM's responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in the EIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best

available technology.” The ASDP Area under consideration was chosen because of its proximity to existing and future potential oil fields. Other lands within the NPR-A that are managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes are described in the main body of the ASDP DEIS, many of which became alternatives considered but eliminated from further analysis because of either economic or technological disadvantages. Section 2.6 contains a detailed discussion of these alternatives, including rationale regarding each alternative’s infeasibility for the proposed project at hand.

4. Findings

The effects of Alternative D fall below the level of significantly restricting subsistence use for the community of Nuiqsut, and for all other communities on the North Slope. The potential impacts to subsistence resources by displacement during construction and operation is greatly reduced under this alternative, as is the decrease in access to key subsistence harvest areas near Fish and Judy creeks and the Nigliq Channel. If adequate mitigation measures are put in place to reduce the impacts of aircraft traffic to production facilities, then impacts during the production phase will also be greatly reduced. This finding applies to the communities of Nuiqsut, Atqasuk, Barrow, and Anaktuvuk Pass.

F. Evaluation and Findings for Full-Field Development (All Alternatives)

Full-field development scenarios have been created for each alternative discussed above, except for the No-Action Alternative. These scenarios are hypothetical estimations of future oil and gas production pads and facilities in the Northeast NPR-A, and were created to allow analysts to explore a full range of potential environmental issues that could occur. All full-field development scenarios consist of at least 20 additional production pads, up to 2 additional processing facilities (such as the Alpine CPF), and associated pipelines, roads, and bridges. It should be stressed that all of the full-field development scenarios are not being considered as action that will occur as part of the ASDP, and that any additional future proposals for development in the NPR-A will be subject to NEPA Analysis.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

Because of the large amount of development posited for every full-field development scenario, all full-field development alternatives have the potential to greatly affect subsistence resources and subsistence uses for the community of Nuiqsut, and most likely for the communities of Barrow, Atqasuk and possibly Anaktuvuk Pass.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The President’s energy policy directs the Secretary of the Interior to “consider additional environmentally responsible oil and gas development, based on sound science and the best available technology.” The full-field development areas were chosen because of their proximity to existing and future potential oil fields. Other lands within the NPR-A that are managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A

would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation Lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Given the hypothetical nature of the full-field development scenarios, other alternatives that would reduce the use of these public lands for subsistence purposes were not discussed. In fact, the full-field development scenarios were intentionally created near areas of environmental or subsistence concerns, so that authors analyzing the proposed alternatives in the main body of the ASDP DEIS would be able to discuss other potential issues not covered by the proposed action.

4. Findings

The effects of all full-field development scenarios fall above the level of significantly restricting subsistence use for the community of Nuiqsut, and possibly the communities of Barrow and Atqasuk. The potential impacts to subsistence resources by displacement during construction and operation, as well as the decrease in access to key subsistence harvest areas exceed the non-significant level; therefore, a positive determination is required pursuant to ANILCA § 810.

Depending on the resulting migration patterns for the Teshekpuk Lake Herd, and the areas of relocation for other subsistence species, the communities of Barrow, Atqasuk and Anaktuvuk Pass may also be affected.

G. Evaluation and Findings for the Cumulative Case

The cumulative case as presented in Section 4F takes into consideration all past, present and reasonably foreseeable future activities on the North Slope, in addition to the proposed action alternatives discussed above. These activities include major oil spills, both on land and in the sea; development occurring elsewhere on the North Slope, including Prudhoe Bay, Kuparuk, and offshore; exploration and development in other areas of the NPR-A; and the construction of a road linking Nuiqsut to the current highway infrastructure in Alaska.

1. Evaluation of the Effect of Such Use, Occupancy, or Disposition on Subsistence Uses and Needs

The cumulative case includes potential adverse effects on subsistence harvest patterns caused by existing and planned development activities, multiple lease sales proposed for the Northwest NPR-A Planning Area, possible additional sales in the remainder of the NPR-A, and other planned and reasonably foreseeable projects on the North Slope. Future activities could include Federal and State offshore lease sales, State and private onshore activities, and transportation of oil and gas by tankers, and the construction of additional production pads and facilities. Whether any development actually would occur is not known, but the following discussion assumes that the development and production stage would occur. Section 4F of the ASDP DEIS contains a detailed description of the cumulative case, including the possible oil field and infrastructure development that this evaluation uses.

Cumulative effects on caribou-calving distribution are likely to be long term over the life of the oil fields, but probably local within 2 to 3 miles (3 to 4 kilometers) of roads located within the calving areas. This reduction in calving and summer habitat used by cows and calves of the Central Arctic Herd (CAH), the TLH, and the Western Arctic Herd (WAH) caribou from future oil and gas activities, represents a functional loss of habitat that may result in a long-term effect on caribou herd productivity. The ranges of the CAH lead to more subsistence hunting pressure on the TLH; however, this potential effect may not be measurable because of the great natural variability in caribou population productivity. Establishing the existence of a direct link to reduced harvests or access to subsistence resources under the cumulative case currently is difficult, but it is possible that these effects may exist in the future. The additional development pressure envisioned by the cumulative case scenario could exacerbate changes in abundance and productivity of caribou and these changes may, in turn, adversely affect subsistence harvests.

Possible changes in caribou distribution patterns could also negatively affect subsistence hunters. For example, changes in the location of caribou calving areas may affect hunter success if calving caribou were to move to areas that were more difficult for subsistence hunters to access.

Access by subsistence users to the Prudhoe Bay oil fields currently is restricted. Measures are proposed in this DEIS that are intended to limit such broad restrictions in the ASDP Area, but some restrictions for reasons of safety in the ASDP Area as well as elsewhere could occur. Such a reduction to access could negatively affect subsistence users.

Any future gravel roads built from the NPR-A or any other North Slope development to the existing haul road could allow access to sport hunters, particularly if no restriction on hunting from or near the roads applies. If unrestricted access would be allowed, any increase in the numbers of hunters in the area would increase competition for caribou.

The cumulative effects on muskoxen, moose, wolves, and wolverines are likely to be local within about 1 or 2 miles of oil exploration and development facilities and resource inventory-survey activities and generally short-term, with no significant adverse effects on their populations.

Although there would be more disturbance of waterfowl (including black brant) and, possibly, more small intermittent oil spills in the cumulative case, the overall effects on waterfowl are expected to be minimal under all alternatives. Even a major oil spill would not change this assessment because of the nesting and feeding patterns of the waterfowl present in the Arctic.

Fish habitat that is protected by setbacks would receive minimal impacts from most activities, although a major oil spill in the Colville River could significantly affect several fish species. While Alternatives B and C protect more fish habitat than Alternative A, the overall cumulative effects on fish would not be noticeably different under the various alternatives.

The offshore development and transport that is possible under a cumulative case could result in oil spills in the marine environment. Any oil spill that taints, or is perceived to taint, whale or other marine mammals of importance to subsistence users would have a significant negative effect on those users. If such a spill affected migration patterns or distributions of any marine mammal used for subsistence, it would also have significant negative effect on subsistence users. There is also the possibility of cumulative effects on marine mammals from disturbance and noise, caused by both development and barging or other transportation necessary to provide support to offshore facilities.

From 1990 to 1997, the North Slope's permanent population grew at an annual rate of 2.7 percent, and Nuiqsut was the fastest growing village. This rate could continue for the foreseeable future with or without the development envisioned in the cumulative case discussed in the ASDP EIS. The effects of such growth on competition for subsistence resources are difficult to predict, but it is possible that over time there will be increased competition among local subsistence users. It is unlikely that the transient workers associated with oil and gas development will add to the competition, because they are ineligible for the subsistence priority under existing Federal regulations.

2. Evaluation of the Availability of Other Lands for Oil and Gas Exploration and Development

The Naval Petroleum Reserves Production Act of 1976 (NPRPA), as amended, gives the Secretary of the Interior the authority to conduct oil and gas leasing in the NPR-A. However, the law prohibited petroleum production from occurring in NPR-A until authorized by Congress. In 1980, Congress granted that authorization through appropriations legislation and directed the Secretary of the Interior to undertake a program of competitive leasing of potential oil and gas tracts in the Reserve. The BLM is undertaking this ASDP EIS to fulfill the mandates of the President's energy policy as well as BLM's responsibilities to manage these lands under authority of NPRPA and the 1980 appropriation legislation and other authorities cited elsewhere in this DEIS. The President's energy policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the

best available technology, through further lease sales in the National Petroleum Reserve-Alaska.” The ASDP Area under consideration was chosen because of its proximity to existing and future potential oil fields. Other lands within the NPR-A managed by the BLM are either too remote for economically viable oil and gas production, or have a low probability of containing sufficient quantities of oil or gas. Lands outside of the NPR-A would not satisfy the congressional direction to explore and develop oil and gas resources within the NPR-A. State and Native Corporation lands cannot be considered in a BLM plan.

3. Evaluation of Other Alternatives that would Reduce or Eliminate the Use, Occupancy, or Disposition of Public Lands Needed for Subsistence Purposes

Other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes are described in the main body of the ASDP DEIS, many of which became alternatives considered but eliminated from further analysis because of either economic or technological disadvantages. Section 2.6 contains a detailed discussion of these alternatives, including rationale regarding each alternative’s infeasibility for the proposed project at hand.

4. Findings

The cumulative case may significantly restrict subsistence resources or their use for caribou and requires a positive determination pursuant to ANILCA § 810. The distribution of caribou populations on the North Slope has been affected by Prudhoe Bay development, and access to subsistence resources currently is restricted there. Although procedures will be in place to ensure that future development affects access as little as possible, it is still probable that safety considerations will reduce the total area available for subsistence purposes. If a major oil spill occurs in the future, it could significantly affect both populations and distributions of fish, whales and other marine animals, causing significant restrictions to subsistence resources. Population growth over the course of the plan results in a greater number of residents relying on local resources to meet their needs. In addition, construction of any road that would allow access to the area will allow for an increase in competition for subsistence resources by sport hunters. These restrictions have the potential to affect Barrow, Atqasuk, Nuiqsut, and Anaktuvuk Pass.

III. NOTICE AND HEARINGS

ANILCA § 810(a) provides that no “withdrawal, reservation, lease, permit, or other use, occupancy or disposition of the public lands which would significantly restrict subsistence uses shall be effected” until the Federal Agency gives the required notice and holds a hearing in accordance with §810(a)(1) and (2). The BLM will provide notice in the *Federal Register* that it has made positive findings pursuant to § 810 that Alternatives A, B, and C in the DEIS meet the may significantly restrict threshold. When the full-field development scenarios, as well as the cumulative case are considered, all alternatives exceed the may significantly restrict threshold. As a result, public hearings will be held in the potentially affected communities of Nuiqsut, Barrow, Atqasuk, and Anaktuvuk Pass. Notice of these hearings will be provided in the *Federal Register* and by way of the local media, including the *Arctic Sounder* newspaper and KBRW, the local Barrow radio station with coverage to all villages on the North Slope.

IV. SUBSISTENCE DETERMINATIONS UNDER § 810(a)(3)(A), (B), and (C)

ANILCA § 810(a) provides that no “withdrawal, reservation, lease, permit, or other use, occupancy or disposition of the public lands which would significantly restrict subsistence uses shall be effected” until the Federal Agency gives the required notice and holds a hearing in accordance with §810(a)(1) and (2), and makes the three determinations required by § 810(a)(3)(A), (B), and (C). The three determination that must be made are: 1) that such a significant restriction of subsistence use is necessary, consistent with sound management principles for the utilization of the public lands; 2) that the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other such disposition; and 3) that reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions [16 U.S.C. § 3120(a)(3)(A), (B), and (C)]. The BLM has found in this subsistence evaluation that all the alternatives considered in this IAP/EIS (including

the no-action alternative), when considered together with all the past, present, and reasonably foreseeable future cumulative effects discussed in this EIS, may significantly restrict subsistence uses. Therefore, BLM will undertake the hearing procedures required by ANILCA § 810 (a)(1) and (2) in conjunction with release of the DEIS in order to solicit public comment from the potentially affected communities and subsistence users.

Once the hearings are completed, the BLM will review all comments and recommendations from Nuiqsut, Barrow, Atkasuk, and Anaktuvuk Pass and make the determinations required by § 810(a)(3)(A), (B), and (C). These determinations will appear in the ASDP Final ANILCA 810 Evaluation, to be included in the Final EIS for the proposed ASDP.